



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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May 31, 2005

Consultation No. 2-15-97-F-416-R1

Ted West, P.E.
Federal Highway Administration
Federal Building, Room 826
300 East 8th Street
Austin, Texas 78701

Dear Mr. West:

This letter constitutes an amendment to the U.S. Fish and Wildlife Service's (Service) May 21, 2001, Biological Opinion (2001 BO) based on review of the proposed highway project, U.S. Highway 183 Alternate (US 183A), located in Williamson County, Texas, and its effects on the endangered Tooth Cave ground beetle (*Rhadine persephone*) and the endangered golden-cheeked warbler (*Dendroica chrysoparia*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

The action is being implemented by the Central Texas Regional Mobility Authority (CTRMA) through funding and oversight of the Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA), the Federal action agency. Your April 26, 2005, request for reinitiation of formal consultation was received on April 27, 2005.

The purpose of this amendment is to evaluate the potential impacts of the project on the Tooth Cave ground beetle (ground beetle) and modify the incidental take statement, as appropriate, in light of new information on the range-wide status of the species and current evaluation of the project site. FHWA has requested that the incidental take statement from the original 2001 BO issued by the Service, be modified to include any and all potential impacts of the project within the proposed right-of-way. The 2001 BO authorization for take of the beetle was limited to the three caves known to contain the species (Big Oak, Raccoon and Jug caves). The Service agreed to reevaluate the 2001 BO and the associated incidental take statement based on the following new information:

1. The updated information on the range-wide status of the species;
2. The acquisition of the Discovery Well Cave Preserve; and
3. The vegetation clearing of the project site has uncovered no new karst features and reduces the likelihood that new caves containing the listed species will be discovered.

This amendment to the 2001 BO is based on information provided in the April 26, 2005, letter from FHWA and of the draft report prepared by CTRMA, through its private consultants HNTB Corporation (HNTB), "Summary of Information for Assessing the Status of the Tooth Cave Ground

Beetle (*Rhadine persephone*)” (May 2005 version). Other information from scientific literature and information in our files were also used in preparing this biological opinion amendment. A complete administrative record of this consultation is on file at this office.

This amendment does not include a reanalysis of the impacts to the golden-cheeked warbler. And, unless specifically amended in this document, all of the information, analysis, and requirements of the 2001 BO remain in full effect.

Consultation History Since the May 1, 2001, Biological Opinion

Consultation regarding the proposed US 183A project has occurred between the Service and FHWA (and its representatives) since at least 1996. The following discussion provides a summary of official correspondence regarding this project that has occurred since the 2001 BO was completed. In addition to this correspondence, meetings, emails and phone conversations between the Service, CTRMA, TxDOT, and HNTB have occurred to coordinate this consultation.

Correspondence regarding the conservation measures for the golden-cheeked warbler included letters from the Service dated: November 6, 2001, December 10, 2001, July 16, 2002, and March 17, 2003.

By letter on February 14, 2003, TxDOT notified the Service of the intention to acquire and manage a karst preserve at the Lime Creek tract for conservation of the Tooth Cave ground beetle. The Service concurred, by letter on March 17, 2003, that this action would fulfill the intent of the Reasonable and Prudent Measure #1 of the 2001 BO for US 183A. In March 2004, TxDOT submitted the *Karst Conservation Summary Report* for US 183A. The Service accepted the report, by letter dated March 17, 2004, in accordance with the 2001 BO.

On February 16, 2005, the Service commented on the Water Pollution Abatement Plan for US 183A. On March 11, 2005, the Service concurred with CTRMA’s request to temporarily modify the protective zone around Big Oak Cave during construction, finding the modification as a minor change in the project and resulting in no additional impacts to the species.

BIOLOGICAL OPINION

I. Description of Proposed Action

The proposed action for constructing US 183A has not substantially changed since the 2001 BO was completed.

Portions of the project have already been implemented, or are now underway, including:

- Conservation credits of 153 acres of golden-cheeked warbler habitat were purchased from the Hickory Pass Ranch Conservation Bank in 2003 and 2004;
- The 106-acre Discovery Well Cave Preserve was purchased in 2003;
- The southern-most portion of the project (from State Highway 45 to Lakeline Boulevard) is currently under construction and Jug Cave has been fully filled for the highway;
- Much of the remaining right-of-way for the project has already been cleared of natural vegetation;
- A small construction set-back around Big Oak Cave was established with a rock berm.

II. Status of the Species/Critical Habitat

a. Tooth Cave ground beetle

Life history, taxonomy, ecological information, and threat analysis for the Tooth Cave ground beetle has not substantially changed since the 2001 BO was completed. No critical habitat is designated for this species. However, our understanding of the range and status of the species has increased, as described below.

All of the information available to the Service on the range-wide distribution of the Tooth Cave ground beetle has recently been reviewed by HNTB, on behalf of FHWA, TxDOT and CTRMA. A draft report of this information has been prepared and presented to the Service (latest version May 2005): “Summary of Information for Assessing the Status of the Tooth Cave Ground Beetle (*Rhadine persephone*).” The Service is using this draft report as the basis of the status of the species for this amendment to the 2001 BO in the following discussion.

Tooth Cave ground beetles were known from only two karst features when listed as endangered in 1988. The 1994 Recovery Plan lists the species as occurring in 23 karst features and tentatively identified from another four. Based on the review by HNTB, Tooth Cave ground beetles have now been “confirmed” from 46 karst features and are “tentatively confirmed” from another six features. All of these features are in either the Cedar Park or Jollyville Plateau Karst Faunal Regions (KFR)¹. Five additional karst features, from which Tooth Cave ground beetles have not been collected, have been referred to as, or implied to contain, potential habitat for the species. Four of these features are in the Cedar Park KFR. One of these features is in the McNeil/Round Rock KFR, but is not considered likely to actually contain the Tooth Cave ground beetle. The occurrence of other troglobitic (obligate cave-dwelling) species was most often cited as an indicator for the potential presence of Tooth Cave ground beetles.

Of the 57 karst features considered as confirmed, or tentatively confirmed, Tooth Cave ground beetle collection sites, or considered as containing habitat potentially suitable for the species, three features are

¹ Karst Fauna Regions are large geographic areas that are delineated by Veni (1992) based on geologic continuity, hydrology, and the distribution of 38 rare troglobitic species in Travis and Williamson counties (USFWS 1994).

destroyed. Some 48 features are within 27 preserves or tracts managed, at least in part, for conservation of Tooth Cave ground beetles. The size of these areas vary considerably; the largest preserve is about 494 acres (200 hectares) and the smallest is about 0.05 acres (0.02 hectares). At least 8 of these tracts are more than 20 acres (8 hectares) in size. Tooth Cave ground beetle preserve and tract owners include public and private entities. The management actions vary considerably for these karst conservation areas and the habitat of the beetle.

In the Cedar Park KFR, where the proposed action is located, 33 caves considered as confirmed, or tentatively confirmed, Tooth Cave ground beetle collection sites, or considered as containing habitat potentially suitable for the species, are contained within 17 preserves managed, at least in part, for the protection of the species. In the Jollyville Plateau KFR, 15 caves considered as confirmed or tentatively confirmed Tooth Cave ground beetle collection sites, or considered as containing habitat potentially suitable for the species, are contained within 10 preserves, setbacks, or parcels managed, at least in part, for the protection of the species.

III. Environmental Baseline

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem, within the action area, not including the effects of the proposed action.

a. Status of the species within the action area

The only substantial change in the status of the Tooth Cave ground beetle in the action area since the 2001 BO was completed is the acquisition of the Discovery Well Cave Preserve (TxDOT 2003) and the construction actions in the southernmost portion of the proposed action that destroyed Jug Cave. Jug Cave was found to be inhabited by the ground beetle during surveys for this project. The Cave was located near (northeast) the intersection of US 183 and Lakeline Mall Drive. The surface drainage of Jug Cave was already impacted by the existing US 183 Highway and the footprint of the cave extended under the existing highway. Jug Cave was completely surrounded by urban development and located directly within the proposed highway right-of-way. The cave was excavated and filled with highway base during earlier phases of the proposed action to build US 183 A.

IV. Effects of the Action

b. Analyses for effects and species' response to the proposed action

Direct and indirect effects, Tooth Cave ground beetle

The 2001 BO analyzed the effects of the proposed action on the three caves known to contain the ground beetle. The Service does not anticipate effects to the species beyond those evaluated in the

2001 BO. However, there is a small chance that one or more additional caves containing the species could be discovered as the project construction commences. About 43 acres (17 hectares) of Karst Zones 1 or 2 in the southern portion of the project have already been excavated and/or filled from the highway construction. There are about 61.5 acres (25 hectares) of the project area designated as Karst Zones 1 or 2 which have not yet been filled or excavated and could contain habitat for the ground beetle. The likelihood of encountering any additional caves is considered very low because extensive ground surveys were done in this area during project planning and initial vegetation clearing and grubbing of the surface area has already occurred and revealed no new karst features that would indicate habitat for the species is present.

In the context of the range-wide status of the species, these impacts from both direct and indirect effects do not appreciably reduce the likelihood of species survival or recovery. We believe this would be the case, even in the unlikely event that one or more additional caves that contained the Tooth Cave ground beetles were discovered in the construction area. Despite the complete loss of Jug Cave, substantial impacts to Big Oak Cave, and minor impacts to Raccoon Cave, the Service believes there are still a sufficient number of high quality caves and potentially-preserved KFAs within the Cedar Park and Jollyville Plateau KFRs (at least three) that contain the Tooth Cave ground beetle to ensure recovery of the species within this KFR is not precluded by the proposed action.

c. Beneficial effects

The acquisition and preservation of Discovery Well Cave Preserve will be a beneficial effect for the Tooth Cave ground beetle and will serve to minimize the overall impacts to the species from the proposed action.

V. Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The project area (Southern Williamson and northern Travis counties, Texas) continue to undergone rapid and sustained urban development as a fast-growing urban area, particularly in the vicinity of the US 183A project.

VI. Conclusion

After reviewing the updated status of the Tooth Cave ground beetle, the environmental baseline for the action area, the effects of the proposed US 183A project, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Tooth Cave ground beetle. No critical habitat has been designated for these species, therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Amount or Extent of Take Anticipated

The Service anticipates take of Tooth Cave ground beetle through the loss of about 104.5 acres (42 hectares) of Karst Zones 1 and 2 (about 43 acres (17 hectares) have already been lost) as a result of this proposed action. The incidental take is expected to be in the form of harm due to permanent habitat loss. Take of Tooth Cave ground beetles in Big Oak Cave will be in the form of harm, due to severe impacts to the cave, resulting in habitat loss for the species. Raccoon Cave occurs within the impact area, but outside of the proposed highway ROW, and would be subject to minor impacts to the cave ecosystem that could result in harm to Tooth Cave ground beetles. Though unlikely, if additional caves containing this species are discovered in the 61.5 acres (25 hectares) of Karst Zones 1 and 2 remaining in the project area, permanent habitat loss and the killing of additional individuals of the species could occur.

The Service usually measures the status of karst invertebrate species populations, such as the Tooth Cave ground beetle, based on the number and location of discrete occupied caves and their condition. Karst habitats for this species cannot be recreated, so the loss of an occupied cave is a permanent reduction in the total population size of this species. Because of the small size of the Tooth Cave ground beetle and the nature of its habitat (caves), documenting any dead or impaired specimens is unlikely.

Effect of the take

The Service determined that this level of anticipated incidental take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat, since none has been designated.

Reasonable and prudent measures

The following reasonable and prudent measure replaces the original measure #1 from the 2001 BO. All other measures from the 2001 BO remain in place.

1. Karst preserve. FHWA / TxDOT / CTRMA, and any designee, will establish one high quality karst preserve. The acquisition of the Discovery Well Cave Preserve by TxDOT fulfills this reasonable and prudent measure.

Terms and conditions

To be exempt from the prohibitions of section 9 of the Act, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. All other terms and conditions from the 2001 BO remain in place. Appendix A, provided in the 2001 BO, has been updated and included in this amendment.

1. Karst preserve.

A. Preserve acquisition. The acquisition of the Discovery Well Cave Preserve by TxDOT fulfills this term and condition from the 2001 BO. This action was proposed in the project biological assessment (*Conservation Options 3.2.1 Karst Invertebrates*) and the amended project description submitted by letter on April 18, 2001. The karst preserve will minimize the impacts of the proposed action to construct US 183A by preserving areas known to contain the Tooth Cave ground beetle, consistent with recovery plan objectives.

Re-initiation Notice

The Service believes that Tooth Cave ground beetle will be impacted in no more than 104.5 acres (42 hectares) of Karst Zones 1 and 2 (43 acres(17 hectares) are already impacted). The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of impact is exceeded, such incidental take represents new information requiring re-initiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately stop the activity causing the take and provide an explanation of the causes of the taking. Reinitiation of section 7 will be required to review the need for possible modification of the reasonable and prudent measures.

This amendment to the 2001 BO now authorizes take of the Tooth Cave ground beetle based on the full acreage of Karst Zones 1 and 2 impacted by the project, but it is still important that specific monitoring procedures be enforced to ensure that the Service will be notified if additional caves are discovered that contain this species. If an additional cave (or caves) is discovered during project construction and is found to contain other federally listed species not included in this biological opinion, section 7 consultation will need to be reinitiated immediately.

Thank you for your ongoing cooperation and willingness to work for the conservation of threatened and endangered species.

Sincerely,

/s/ Robert T. Pine

Robert T. Pine
Supervisor

APPENDIX A

Construction Monitoring for Endangered Karst Invertebrates

FHWA / TxDOT / CTRMA should include the following procedures for all construction activities in Karst Zones 1 and 2 for the proposed U.S. Highway 183 Alternative project.

1. During any land clearing or excavation (trenching, scraping, bulldozing, etc...) in Karst Zones 1 and 2 a qualified karst geologist will remain on-site to ensure detection of any caves, karst features, or subterranean voids that may be encountered. Excavation on the remainder of the project will not require a site geologist be present, but the procedures below will still be followed if any caves, karst features, or subterranean voids are encountered.
2. If any caves, karst features, or subterranean voids are encountered during construction, then construction work within 200 feet of the encountered voids will halt until project environmental consultants have completed necessary evaluations. A qualified karst geologist will respond immediately to evaluate the void geologically to determine if it has the potential to contain endangered karst invertebrate habitat. If the potential for habitat is evident, the Service will be notified immediately. FHWA / TxDOT / CTRMA will have the feature examined by a Service-permitted biologist for the presence of the listed karst invertebrates, following Service protocols. At a minimum, three biological collection surveys will be conducted on three separate days over a period not greater than one week to determine the presence or absence of the listed invertebrates or other species of concern. Between surveys, voids should be covered to prevent drying, but still allow nutrient input. A report of the surveys, including climate data inside and outside of the cave, will be submitted to the Service.
3. If no endangered or threatened species are determined to be present in an encountered feature, environmental consultants will issue specific instructions in accordance with standard practices accepted by Texas Commission on Environmental Quality, as applicable, for any particular void. Whether sealed or not, voids will not allow any contamination into the karst ecosystem. Construction activity will then resume with the carrying out of those specific instructions.
4. If endangered, threatened or species of concern are determined to be present within an encountered feature, FHWA / TxDOT / CTRMA will consult with the Service to determine the best available measures to avoid or minimize impacts to the feature, if possible. Reinitiation of section 7 consultation may be required if impacts to listed species are beyond those authorized in the biological opinion.